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Research Paper

Market linkages of rice arrivals and prices in APMC Bangarpet with processing units : A value chain analysis

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ABSTRACT : The present study has analysed the market linkages of rice arrivals and Prices in APMC Bangarpet with processing units: a value chain analysis. Rice as a global staple food- rice, wheat and maize are the three leading food crops in the world; together they directly supply more than 50 per cent of all calories consumed by the entire human population. A value chain is a sequence of related business activities (functions) from provision of specific inputs for a particular product to primary production, transformation and marketing, upto the final sale of a particular product to the consumer. This process can raise the income of farmers and will provide incentive for improving their management practices towards higher farm productivity. The income of the farmers can be enhanced by increasing production, value addition and better marketing options. The marketing factors are marketable surplus, marketing channels, numbers of players at each level, profit margin of respective players and value addition by different channel players. Therefore, development of agriculture and agro-based industries should go hand in hand. This is because the most critical factor that our planners and policy makers have ignored in the past and the major reason why over the last six consecutive decennial censuses, the burden of workforce down the ladder in primary sector has not diminished despite continuously declining share of this sector, which presently stands as low as 16 per cent in the gross domestic products (GDP) of the country.

KEY WORDS : Profit margin, Marketing channels

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INTRODUCTION :

Rice botanically belongs to *Oryza sativa* L. of Gramineae family. Rice as a global staple food- rice, wheat, and maize are the three leading food crops in the world; together they directly supply more than 50 per cent of all calories consumed by the entire human population. Rice provides 21 per cent of global human per capita energy and 15 per cent of per capita protein. Rice also provides minerals, vitamins and fibre, although all constituents except carbohydrates are reduced by milling. Rice is primarily a high-energy calorie food. The major part of rice consists of carbohydrate in the form of starch, which forms about 72-75 per cent of the total

grain composition. The protein content of rice is around 7 per cent. The protein of rice contains glutamine, which is also known as oryzenin. Some of the popular commercial varieties and non- basmati aromatic varieties of rice grown in India are Jaya, PR-103, PR-106, PR-113, PR-114, PR-115, IR-8, IR-64, HKR-126, Vikas, Pant Dhan-16, Pusa-44, Puja-677, Ratna, Bk-190, Jaya, Chambal, Kaveri, Vivek Dhan-82, Palam Dhan-957. In India, agro-processing units are regarded as the 'sunrise sector' of the economy in view of its large potential for growth and socio-economic impacts on employment, income generation and exports. There are various multiplier effects of agro-processing industry such as spread of industrialization in rural areas leading to more livelihood options to teeming millions, nutritional supplements, stable prices of agricultural commodities and many other effects due to backward and forward linkages.

The by-products of rice milling are used for a variety of purposes. Rice bran is the most valuable by-product of rice milling industry. It is obtained from the outer layer of the brown rice. Generally, rice bran consists of pericarp, aleurone layer, germ and a part of endosperm. Bran removal amounts to 4 to 9 per cent of the weight of paddy milled and is abundant in oil. Raw rice bran contains about 18 to 20 per cent oil whereas parboiled rice bran contains about 22 to 25 per cent oil. The de-oiled bran, which is a rich source of protein (about 17%) and vitamins (Vitamins A and E), is used as cattle and poultry feed. It is a good source of foreign exchange earnings. Rice hulls can be used in manufacture of insulation materials, cement and cardboard. It is also used as litter in poultry keeping. Rice straw is used as cattle feed and as litter during winter season.

The economic prosperity of rural farmers in particular was achievable only with an effective integration and synergy between agriculture and agro-based industries (Tripathy, 2006). However, it is disheartening to note that despite large and diversified agricultural base, commercial processing in India is quite low. As such, agricultural development may not go very far unless there is development of Agro-based industries not only to take up surplus labour force from agriculture but also to provide a solid technical base to modernize agriculture. Agricultural transformation through creation of backward and forward linkages with industry is a recently emerging phenomenon

Therefore, development of agriculture and agro-based industries should go hand in hand. This is because the most critical factor that our planners and policy makers have ignored in the past and the major reason why over the last six consecutive decennial censuses, the burden of workforce down the ladder in primary sector has not diminished despite continuously declining share of this sector, which presently stands as low as 16 per cent in the gross domestic products (GDP) of the country. This clearly shows lopsided development wherein changes in sectoral output composition have not led to the proportionate changes in structure and occupation of workforce. Consequently, the disparity between per worker income in agricultural *vis-à-vis* non-agricultural sector has widened over the years. This can be clearly verified from the output growth in industrial sector to the tune of 8-10 per cent in juxtaposition to 2-3 per cent annual growth in agriculture. Therefore, rapid growth of agro-processing industry close to agricultural production centre's can bring about the desirable shift in employment structure without moving people from rural to urban areas. This process can raise the income of farmers and will provide incentive for improving their management practices towards higher farm productivity. The income of the farmers can be enhanced by increasing production, value addition and better marketing options. The marketing factors are marketable surplus, marketing channels, numbers of players at each level, profit margin of respective players and value addition by different channel players.

MATERIALS AND METHODS :

A value chain is a sequence of related business activities (functions) from provision of specific inputs for a particular product to primary production, transformation and marketing, upto the final sale of a particular product to the consumer (GTZ Value Links, 2008). It also includes the set of operators performing different functions, *viz.*, producers, processors, traders and distributors of a particular product linked by a series of business transactions through which the product passes from primary producers to end consumers. Thus, value chain actors, responsible for transmission of materials, information and/or services, share an interest in the end product because changes in the end-market affect them both collectively and simultaneously.

Mapping :

Mapping is a central element of value chain analysis.

It is used to show the flow of transactions from sourcing of raw materials and inputs, to production, processing, marketing and final sale. The maps can also illustrate costs, value addition at each stage, secondary services important to each stage, critical constraints and the relative influence of players along a value chain.

Participatory approach :

Each actor along the chain affects value creation. The actors performing different functions and exerting different levels of clout often have very different perspectives on critical Opportunities, bottlenecks and the potential of different interventions. Hence, value chain analysis demands participation of full range of stakeholders (Kaplinsky, 2000). This range includes buyers, processors, producers, input suppliers and public agencies and associations that impact industry, trade, labour and commercial regulations and practices.

The first step in mapping the market is to delineate the value chain. The flow of seed to farmers and grain or tubers to the market occurs along chains. These can be referred to as value chains because as the product moves from chain actor to chain actor e.g. from producer to intermediary to consumer it gains value. A value chain can be defined as the full range of activities which are required to bring a product or service from conception, through the different phases of production (involving a combination of physical transformation and the input of various producer services), delivery to final customers, and final disposal after use. The chain actors who actually transact a particular product as it moves through the value chain include input (e.g. seed suppliers), farmers, traders, processors, transporters, wholesalers, retailers and final consumers. A simplified version of a value chain is shown in Fig. A .

Mapping a value chain

Value chains can be mapped and analyzed using value chain analysis (VCA) which can include qualitative and/or quantitative tools. The market map is a conceptual and practical tool that helps us identify policy issues that may be hindering or enhancing the functioning of the chain and also the institutions and organizations providing the services (e.g. market information, quality standards) that the different chain actors need in order to make better informed decisions.

The enabling environment consists of the critical

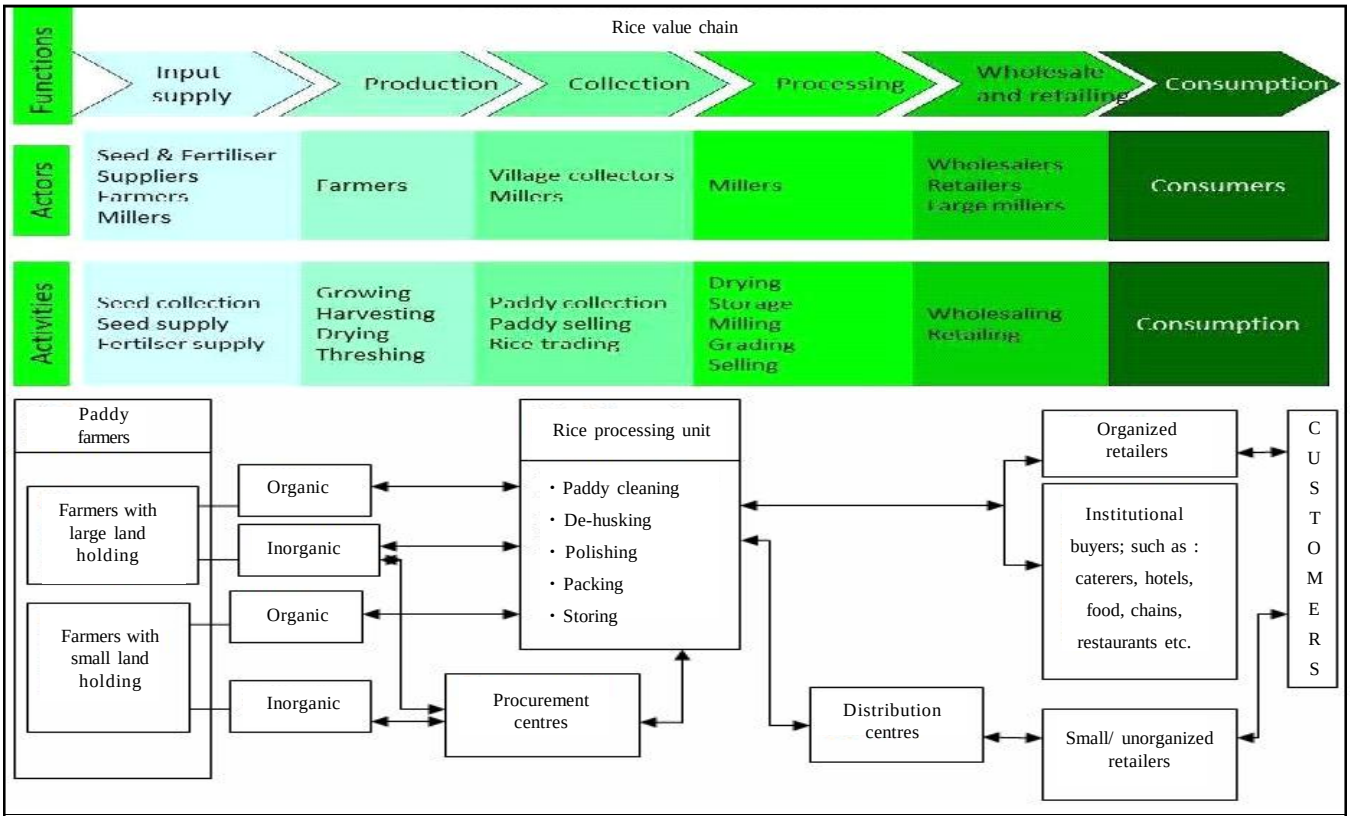

Fig. A : Rice value chain map

factors and trends that are shaping the value chain environment and operating conditions, but may be amenable to change. These "enabling environment" factors are generated by structures (national and local authorities, research agencies etc.) and institutions (policies, regulations and practices) that are beyond the direct control of economic actors in the value chain.

The third component of the market map framework is concerned with mapping these services that support, or could potentially support, the value chain's overall efficiency. The services that can potentially add value is huge and include.

– Input supplies (seeds, livestock, fertilizers etc.)
– Market information (prices, trends, buyers, suppliers)
– Financial services (such as credit, savings or insurance)
– Transport services
– Quality assurance - monitoring and accreditation
– Support for product development and diversification.

Tools for value chain research :

Participant observation :

Fundamental to much qualitative research especially anthropological research. Leads the inquirer to a greater understanding of the characteristics of the situation being researched.

Semi-structured interviews and focus group meetings:

Guided conversations in which topics are predetermined and during which new questions and insights arise because of the discussion and visualized analyses. They are more an art than a set of fixed procedures and the interview process is dynamic and iterative. One-to-one conversations and group meetings are needed because a frequent bias in development is to think in terms of 'the farmer' (and other value chain actors) despite the fact that decisions about farming are not made by the farmer in isolation and decision making is influenced by social pressures and beliefs. Furthermore interviews with groups may be more instructive than with individuals because group members have an overlapping spread of knowledge, which may cover a wider field than any single person.

Questionnaire :

Quantitative data permit a more objective assessment and facilitate an assessment of larger-scale patterns, trends and relationships among different value chain actors. Questionnaires focused on what value chain actors are doing, qualitative research tools not only provided a means to check the reliability of data from questionnaires, but can also gave more insight into why actors are doing what they do and how they formulate their decisions.

RESULTS AND DATA ANALYSIS :

The results obtained from the present investigation as well as relevant discussion have been summarized under following heads :

Value analysis of rice milling unit (Cmr)- Raw rice process flow process :

– Cost/value (Rs.) Accumulated value (Rs.) remarks
– Paddy (Graded A) 580 per qtl. 580.00 value of MSP
– Taxes and levies
– Vat – 4 per cent
– Aarat- 2.5 per cent

Table 1: India's rice production in global context

Year	World production in million (MT)	Indian production in million (MT)	India's share (In %)
2001-02	399	93.34	23.39
2002-03	380	71.82	18.90
2003-04	390	88.53	22.70
2004-05	405	83.13	20.53
2005-06	423	91.79	21.70
2006-07	427	93.35	21.86
2007-08	438	96.69	22.08
2008-09	459	99.18	21.61
2009-10	457	89.09	19.49
2010-11	449	95.98	21.38
2011-12	456	104.32	22.88
2012-13	463	103	22.25

Source : FAOSTAT, 2012

- Market fee- 2 per cent
- Cess fee – 2 per cent + cleaning, loading, misc. - 1.5 per cent
- Total value :12 per cent 69.60 per qtl. 649.60
- Drying: 9/- per qtl. 658.60
- Dehusking and polishing 20 per qtl. 678.60
- Grading Rs. 2/- per qtl. 680.60
- Yield @ 67 per cent
- (Raw rice) Rs. 1015.80
- For parboiled rice, yield is 68 per cent
- Custody and maintenance charges 12/- P. qtl. 1027.80 charges paid by agencies.
- Sale price: 1053.00
- Net profit : 25.20 per qtl.
- Gross profit : 25.20 per qtl
- Value
- Cost of rice bran (7%) @ Rs. 500/- per qtl. per oil = Rs. 35/-
- Cost of rice husk (19%)@ Rs. 100/- P. qtl. = Rs. 1
- Total = Rs. 79.20/-
- Overall gross profit = Rs. 79.20/- *
- Percentage of gross profit on sales =7.5 per cent

Note: * This excludes overhead and administrative expenses.

Conclusion :

The food grains are the critical requirement for human survival. The availability needs to be backed by availability at affordable price and adequate quality. The availability may be assured by production as well as reduction of wastage. The same applies to rice also. To remain competitive the rice-processing unit needs to adopt the latest supply chain and value chain strategies. They need to focus on co-ordination, collaboration with farmers and customers for smooth flow of paddy to processed rice products as a value chain. The major problems in rice cultivation seem to be high water and chemical usage, and the resultant ecological and economic crisis. Ecological/organic farming methods are prove to sustain production and provide better margins to farmers. Organizing farmers and moving them up in the value chain has shown to be bringing in additional benefits to the farmers. We need to promote the participation women in supply chain and there is shift towards collective decision making from men alone taking decision. There is increase in cost of cultivation and increase in pesticide prices and it is the time to promote organic method of cultivating paddy with increasing organic matter in the soil to prevent ecological issues like methane emission. To sustain the rice production system we need to shorten the rice chain and as per the study the share of farmer in the regular system is only 33 per cent but in case of farmers directly selling or farmers co-operatives marketing rice. Due to lack of market information regarding prevailing prices, arrivals etc., most of the producers market the paddy/rice in the village itself, which deprives them of getting remunerative returns.

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LITERATURE CITED :

Directorate of Economics and Statistics (2010). *Agricultural statistics at a glance 2010, Department of Agriculture* and Co-operation, Ministry of Agriculture, Government of India, NEW DELHI, INDIA.

GTZ Value Links (2008). *Value links manual - The methodology of value chain promotion. GTZ,* GERMANY.

Joshi, P. K., Gulati, A. and Cummings, R. W. (2007). Agricultural Diversification and Smallholders in South Asia. Published Academic Foundation India.

Kaplinsky, R. (2000). Spreading the gains from globalisation: What can be learned from value chain analysis? *J. Develop. Stud.*, **37** (2): 110

Minten, Bart, Murshid, K.A.S. and Reardon, Thomas (2012). Food Quality Changes and Implications: Evidence from the Rice Value Chain of Bangladesh. *Internat. Assoc. Agric. Econ.,* **42** (3) : 100-113.

Pratap, S. Birthal, Joshi, P.K. and Gulati, Ashok (2007). Vertical co-ordination in high-value food commodities: Implications for smallholders. In: *Agricultural Diversification and Smallholders in South Asia, Editions.*

WEBLIOGRAPHY :

FAOSTAT (2012). Statistical databases and data sets of the Food and Agriculture Organization of the United Nations. *http://faostat.*